

Internet Applications

5. Internet Applications

The Internet facilitates various services, ranging from the transfer of files from one place to another, e-mail, the World Wide Web, chat room, blogging, notice board, as well as a whole range of online services from shopping to entertainment. In addition, thousands of governments, educational and commercial institutions as well as millions of individuals have information that is stored on computer system and can be accessed over telephone line, fiber optics cable and satellite communication. In this chapter we will read few most important applications of the Internet.

5.1 Searching the Web

5.1.1 Introduction

Searching the web is a process of information retrieval. The goal of searching the web is to retrieve all the documents which are relevant to a query while retrieving as few non-relevant documents as possible. Searching on the web is made possible by a search engine.



Figure 5.1 – Search Engines

A web search engine is a software system that is designed to search for information on the World Wide Web. The search results are generally presented in a line of results often referred to as search engine results pages (SERPs). The information may be a mix of web pages, images, and other types of files. Some search engines also mine data available in databases or open directories.

A search engine maintains the following processes in near real time:

1. Web crawling/Web Spider
2. Indexing
3. Searching

A **Web crawler** is an Internet bot which systematically browses the World Wide Web, typically for the purpose of Web indexing. Search engines use Web crawling or spidering software to update their web content or indexes of others sites' web content. Web crawlers can copy all the pages they visit for later processing by a search engine which indexes the downloaded pages so the users can search much more efficiently.

Indexing means associating words and other definable tokens found on web pages to their domain names and HTML-based fields. The associations are made in a public database, made available for web search queries. A query from a user can be a single word. The index helps find information relating to the query as quickly as possible

Typically when a user enters a query into a search engine it is a few keywords. The index already has the names of, the sites containing the keywords, and these are instantly obtained from the index. The real processing load is in generating the web pages that are the search results list.

The usefulness of a search engine depends on the relevance of the result set it gives back. While there may be millions of web pages that include a particular word or phrase, some pages may be more relevant, popular, or authoritative than others. Most search engines employ methods to rank the results to provide the "best" results first.

How a search engine decides which pages are the best matches, and what order the results should be shown in, varies widely from one engine to another. As per the studies available in the market, following are most popular and common search engines being leveraged by internet community:

1. Google
2. Bing
3. Yahoo
4. Baidu
5. AOL(previously known as America Online)
6. Ask
7. Lycos

Google Search commonly referred to as Google Web Search or Google, is a web search engine

owned by Google Inc. It is the most-used search engine on the World Wide Web, handling more than three billion searches each day. The order of search on Google's search-results pages is based, in part, on a patented priority rank algorithm called a "PageRank".



Figure 5.2 – Google Search

The main purpose of Google Search is to hunt for text in publicly accessible documents offered by web servers, as opposed to other data, such as images or data contained in databases. It was originally developed by Larry Page and Sergey Brin in 1997.

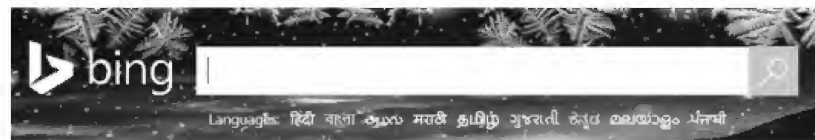


Figure 5.3 – Bing Search

Bing (known previously as Live Search, Windows Live Search, and MSN Search) is a web search engine (advertised as a

"decision engine") from Microsoft. Bing was unveiled by Microsoft CEO Steve Ballmer on May 28, 2009.

5.1.2 YouTube – Online Video Search

YouTube is a video-sharing & video search website headquartered in San Bruno, California, United States. The service was created by three former PayPal employees in February 2005. In November 2006, it was bought by Google for US\$1.65 billion. YouTube now operates as one of Google's subsidiaries.

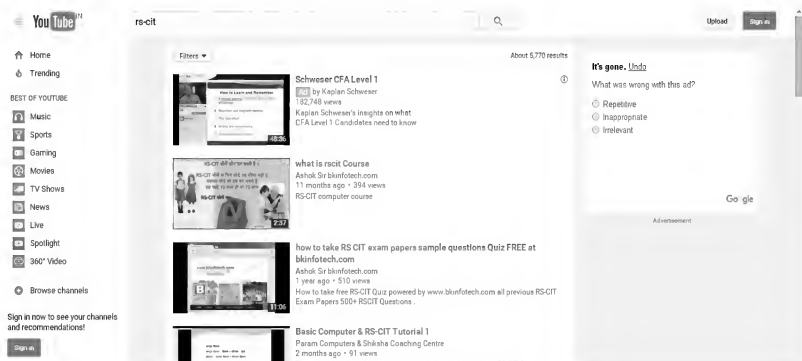


Figure 5.4 – YouTube

The site allows users to upload, view, and share videos, and it makes use of advanced video processing technology to display a wide variety of user-generated and corporate media video. Available searchable content includes video clips, TV clips, music videos, and other content such as video blogging, short original videos, and educational videos.

5.1.3 Narrowing the Search

Finding just the right page among the billions on the Web requires not only a search engine but also a bit of know-how. Here is a selection of tips for searching the Web efficiently:

1. Search for a phrase

To search for an exact, complete phrase and not just its constituent words, put it in quotation marks; for example; instead of typing at sunrise on my birthday type “at sunrise on my birthday”. The number of hits will shrink dramatically, as you'll see only pages that include that exact phrase.

2. Be more specific – Use Key Words

If you want to find articles about managing bookmarks in Safari on an iPhone running iOS 7, don't search for just manage bookmarks. Throw all those terms in: manage bookmarks safari iphone ios 7. The more information you provide, the more useful your results are likely to be.

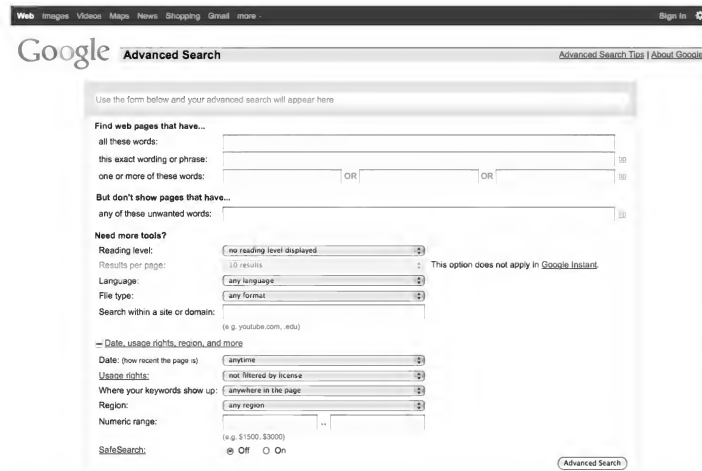
The image shows the Google Advanced Search page. At the top, there's a navigation bar with links to Web, Images, Videos, Maps, News, Shopping, and Gmail. Below this is the Google logo and the text "Advanced Search". The main area contains several search filters: "Find web pages that have..." with fields for "all these words:", "this exact wording or phrase:", and "one or more of these words:"; "But don't show pages that have..." with a field for "any of these unwanted words:"; "Need more tools?" section with dropdowns for "Reading level:", "Results per page:", "Language:", "File type:", and "Search within a site or domain:"; and a "Date, usage, rights, region, and more" section with dropdowns for "Date:", "Usage rights:", "Where your keywords show up:", "Region:", and "Numeric range:". At the bottom, there's a "SafeSearch" section with a toggle switch set to "Off".

Figure 5.5– Advance Search Options in Google Search

3. Try an advanced search

If you want much more control over your searches, such as specifying which geographic regions to search in, how recently created a page should be, or the page's reading level, go to Google's Advanced Search page or, after performing a basic search, click the gear icon in the upper-right corner of the results page and choose Advanced Search from the pop-up menu.

4. Convert, calculate, and more

You can also use Google to find all sorts of information besides lists of webpages. Google can handle calculations (try $104 * 36.8$), currency conversions (185 dollars in euros), time-zone conversions (time in Paris), weather forecasts (weather San Diego), word definitions (define: pedantic), and a great many other things.

5. Use another search engine

Even the best Google search won't help you find pages that Google hasn't indexed. If Google isn't cutting it, you have alternatives. Competitors, including Bing, Yahoo and Ask.com may point you to sites that don't show up in Google. Because each search engine prioritizes search results differently, the page you're looking for may be more prominent in one than in another. If you get

stuck, trying the same search in another engine may do the trick.

USEFUL TIP

Google search has also introduced Voice search nowadays which uses Speech recognition technology to process the questions you ask in your own voice and then give search results based on it.

QUICK REVIEW

- ▶ Name some popular search engines?
- ▶ Mention the tips to narrow your search?
- ▶ What is Web Spider?

5.2 Email

Electronic mail, most commonly called email or e-mail since around 1993, is a method of exchanging digital messages from an author to one or more recipients. Email operates across the Internet or other computer networks. Today's email systems are based on a store-and-forward model. Email servers accept, forward, deliver, and store messages. Neither the users nor their computers are required to be online simultaneously; they need connect only briefly, typically to a mail server, for as long as it takes to send or receive messages.

An Internet email message consists of three components, the message envelope, the message header, and the message body. The message header contains control information, including, minimally, an originator's email address and one or more recipient addresses. Usually descriptive information is also added, such as a subject header field and a message submission date/time stamp.

Popular email platforms include Gmail, Hotmail, Yahoo! Mail, Outlook, and many others.

The general format of an email address is `localpart@domain`, and a specific example is `jsmith@example.org`.

An email address consists of two parts. The part before the @ sign (localpart) identifies the name of a mailbox. This is often the username of the recipient, e.g., `jsmith`. The part after the @ symbol is a domain name that represents the administrative realm for the mail box, e.g., a company's domain name, `example.com`.

We will take the example of Gmail for upcoming sections.

5.2.1 Writing & Sending Email Messages

Email is a great way of getting information to others quickly and easily. Being able to send

messages to friends and family at the touch of a button keeps you up to date no matter where in the world you are. Following steps show you how to send an email using a **Gmail account**. However, many email accounts or applications follow a similar process for creating and sending a new message.

You'll need:

A computer with active internet connection

1. An email account set up and ready to send and receive emails.
2. Follow these step-by-step instructions to send an email

Step 1: Log in to your Gmail account so that you are on the dashboard (main page) of your mail account.

Step 2: Click Compose.

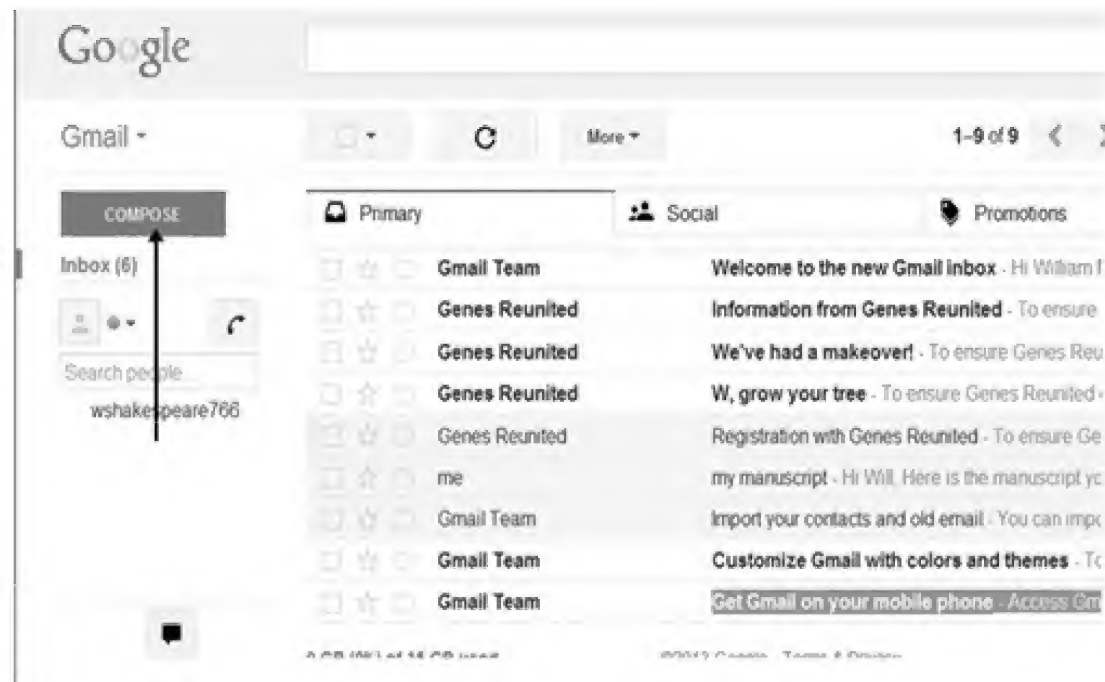


Figure 5.6– Writing a Mail

Step 3: A new blank email window will open up. In the 'To' box, type in the email address of the recipient.

Step 4: You might want to include someone else in your email to 'keep them in the loop'. You can do this by clicking Cc or Bcc, which will open another field. 'Cc' means 'carbon copy' and 'Bcc' means 'blind carbon copy'. Adding an email address to the 'Cc' field means that that person will receive a copy of the email and all the other recipients will see their email address.

If an email address is put into the 'Bcc' field, the person will get a copy of the email but no other

recipient will see that address.

Step 5: The subject field allows you to give the recipient an idea of the topic of your email, like a heading. You don't have to put anything in the subject box, but it can help when viewing and sorting email.

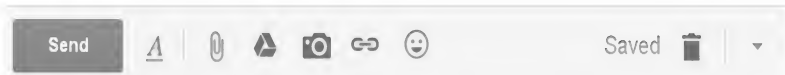


Figure 5.7– Writing a Mail



Figure 5.8– Writing a Mail

Step 6: Email text can be formatted in a similar way to text in a word document. You can change the font

style, color and size using the formatting icons. You can also create bullet points and check the spelling of your email. Choose your formatting from the menu shown.

Step 7: Type your message in the main body field of your email.

Step 8: When you're happy with your email, click the blue Send button at the bottom of the compose window.

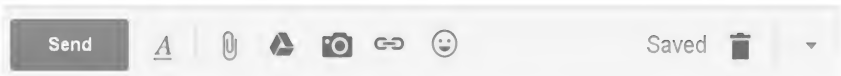


Figure 5.9– Writing a Mail

Step 9: The email you've sent will now be stored in the 'Sent Mail' folder on your Gmail dashboard. You may have to run your mouse pointer over the Inbox folder link to see the other folders.

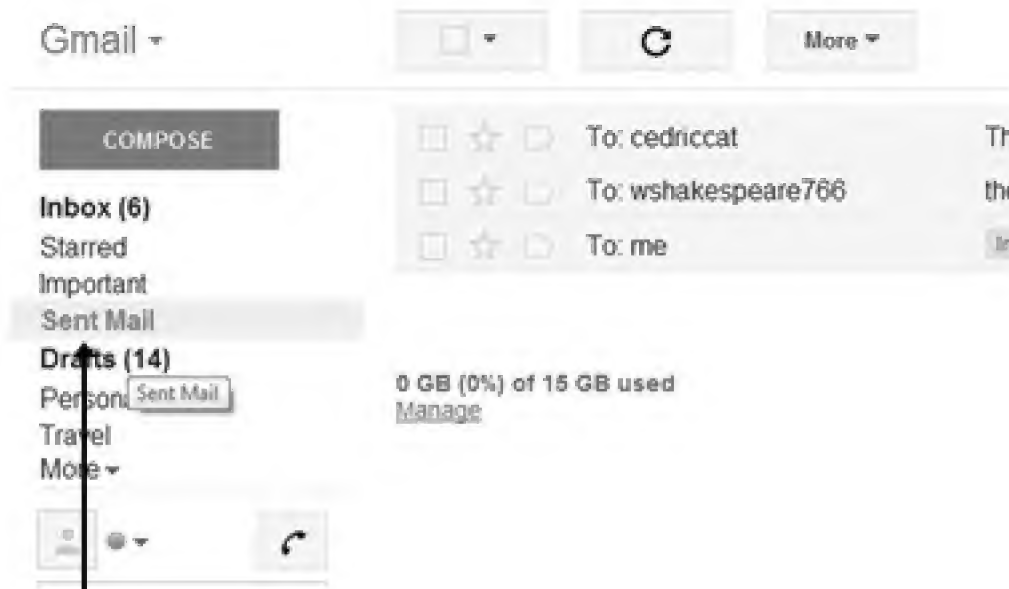


Figure 5.10– Writing a Mail

Step 10: You may start an email but then decide to come back to it later rather than sending it straightaway. Gmail saves your drafts automatically. So you can simply close the email and the unfinished email will be saved to your 'Drafts' folder. When you decide that you're ready to send it, you can retrieve it from the 'Drafts' folder by clicking Drafts and then clicking the correct item in the 'Drafts' folder list. Finish the email and click on Send button as normal.

5.2.2 Email Folders

Actually, going with our example - Gmail doesn't use folders. To help you organize & sort your mail more effectively, Gmail uses **labels** instead. Because multiple labels can be applied to a single message, they are quite a bit more powerful than traditional folders. Following are key Folders in Email:

- **Inbox** – The folder where your incoming emails are stored for your reference.
- **Sent Mail** – The folder where all the emails sent via your email account are automatically saved.
- **Drafts** - A draft folder is where outgoing e-mail messages are temporarily stored. While you are composing a message, most mail programs automatically save a draft of your message in the Outbox. The message is then stored in the drafts until it is successfully sent to the recipient. Once the message has been sent, most e-mail programs move the message to the "Sent" or "Sent Messages" folder. You can also save messages as drafts and finish them later for final sending.
- **Spam** – Email spam, also known as junk email or unsolicited bulk email (UBE), is a subset

of electronic spam involving nearly identical messages sent to numerous recipients by email. Gmail automatically helps identify spam and suspicious emails by detecting viruses, finding patterns across messages, and learning from what Gmail users like you commonly mark as spam or phishing.

- **Trash** – It is where deleted emails are stored for future review until we decide to empty the trash.

USEFUL TIP

Out of all the email clients, most popular is Gmail & has lot of latest utilities for a seamless integration between both desktop & mobile platforms.

QUICK REVIEW

- What are various kinds of Email clients?
- What is a SPAM?

5.3 Chat

This is another popular form of communication over the Internet. Unlike e-mail, mailing list and newsgroups, chat allows people to converse in "real time."

On the Internet, chatting is talking to other people who are using the Internet at the same time you are. Usually, this "talking" is the exchange of typed-in messages requiring one site as the repository for the messages (or "chat site") and a group of users who take part from anywhere on the Internet.

Few popular web based chat services include Skype, Google Hangouts, Facebook Messenger, WhatsApp messenger etc. Normally all chat applications are available across multiple platforms (Mobile, Desktop) and Operating Systems (Windows, Android, iOS).

5.3.1 Skype

Skype is an application that specializes in providing video chat and voice calls. Users can also exchange text and video messages, files and images, as well as create conference calls. Skype allows users to communicate by voice using a



Figure 5.11– Internet Chatting



Figure 5.12– Skype

microphone, video by using a webcam, and instant messaging over the Internet.

Google Hangouts

Google Hangouts is a communication platform which includes instant messaging, video chat, SMS and VOIP (Voice over Internet Protocol) features. It replaces three messaging products that Google had implemented concurrently within its services, including Google Talk, Google+ Messenger and Hangouts, a video chat system present within Google+.



Figure 5.13– Google Hangouts

5.3.3 Facebook Messenger



Figure 5.14– Facebook Messenger

Facebook Messenger is an instant messaging service and software application which provides text and voice communication. Integrated with Facebook's web-based

Chat feature, Messenger lets Facebook users chat with friends both on mobile and on the main website.



Figure 5.15– WhatsApp Messenger

5.3.4 WhatsApp

WhatsApp Messenger is a proprietary cross-platform instant messaging client for smartphones. It uses the Internet to send text messages, images, video, user location and audio media messages to other users using standard cellular mobile numbers.

5.4 Blogs & Social Networking Sites

A blog (a truncation of the expression **web log**) is a discussion or informational site published on the World Wide Web consisting of discrete entries ("posts") typically displayed in reverse chronological order (the most recent post appears first).



Figure 5.16– Blog

Until 2009, blogs were usually the work of a single individual, occasionally of a small group, and often covered a single subject. More recently "multi-author blogs" (MABs) have developed, with posts written by large numbers of authors and professionally edited. MABs from newspapers, other media outlets, universities, think tanks, advocacy groups, and similar institutions account for an increasing quantity of blog traffic. The rise of Twitter and other

"microblogging" systems helps integrate blogs into societal new streams.

A majority of blogs are interactive; allowing visitors to leave comments and even message each other via GUI widgets on the blogs, and it is this interactivity that distinguishes them from other static websites.

Many blogs provide commentary on a particular subject; others function as more personal online diaries; others function more as online brand advertising of a particular individual or company. A typical blog combines text, images, and links to other blogs, Web pages, and other media related to its topic.

A social networking service (also social networking site or SNS) is a platform to build social networks or social relations among people who share similar interests, activities, backgrounds or real-life connections.

A social network service consists of a representation of each user (often a profile), his or her social links, and a variety of additional services such as career services. Social network sites are web-based services that allow individuals to create a public profile, create a list of users with whom to share connections, and view and cross the connections within the system.



Figure 5.17– Social Networking

Social networking sites allow users to share ideas, blogs, pictures, posts, activities, events, and interests with people in their network.

5.4.1 Types of Blogs



Figure 5.18– Blog Types

There are many different types of blogs, differing not only in the type of content, but also in the way that content is delivered or written.

The various types of blogs are classified as below:

- Personal Blog - an ongoing diary or commentary written by an individual
- Collaborative Blog or Group Blog - A type of weblog in which posts are written and published by more than one author. The majority of high-profile collaborative blogs are based around a single uniting theme, such as politics or technology
- Micro Blogging – Microblogging is the practice of posting small pieces of digital content—which could be text, pictures, links, short videos, or other media—on the Internet. Microblogging offers a portable communication mode that feels organic and spontaneous to

many and has captured the public imagination. E.g. Twitter

- **Corporate Blog** – A blog can be private, as in most cases, or it can be for business purposes. Blogs used internally to enhance the communication and culture in a corporation or externally for marketing, branding or public relations purposes are called corporate blogs.
- **Aggregated Blogs** – Individuals or organization may aggregate selected feeds on specific topic or product and provide combined view for its readers. These allow readers to concentrate on reading instead of searching for quality on-topic content and managing subscription.
- **By Genre** – Some blogs focus on a particular subject, such as political blogs, health blogs, travel blogs (also known as travelogs), book blogs, fashion blogs, beauty blogs, etc. How To/Tutorial blogs are becoming increasingly popular. Two common types of genre blogs are art blogs and music blogs.
- **By Media Type** – A blog comprising videos is called a vlog, one comprising links is called a linklog, a site containing a portfolio of sketches is called a sketch blog or one comprising photos is called a photoblog.
- **By Device Type** – A blog can also be defined by which type of device is used to compose it. A blog written by a mobile device like a mobile phone or PDA could be called a moblog.

5.4.2 Social Networking Services

We will primarily discuss 3 major social networking services namely – Facebook, Twitter & LinkedIn.



Figure 5.19– Social Networking Services

5.4.2.1 Facebook



Figure 5.20– Facebook

Facebook is a social networking website that makes it easy for you to connect and share with your family and friends online. Originally designed for college students, Facebook was created in 2004 by Mark

Zuckerberg. By 2006, anyone over the age of 13 with a valid email address could join Facebook. Today, Facebook is the world's largest social network, with more than 1 billion users worldwide.

Facebook allows you to send messages and post status updates to keep in touch with your friends

and family. You can also share different types of content such as photos, links, and more. But sharing something on Facebook is a bit different from other types of online communication. Unlike email or instant messaging, which are relatively private, the things you share on Facebook are more public, which means they'll usually be seen by lots of other people.

While Facebook offers privacy tools to help you limit those who can see the things

you share, it's important to understand that Facebook is designed to be more open and social than traditional communication tools.



Figure 5.22– Facebook



Figure 5.21– Facebook

Some key public features are listed below:

- Marketplace - allows members to post, read and respond to classified ads.
- Groups - allows members who have common interests to find each other and interact.
- Events - allows members to publicize an event, invite guests and track who plans to attend.
- Pages - allows members to create and promote a public page built around a specific topic.
- Presence technology - allows members to see which contacts are online and video chats.

Within each member's personal profile, there are several key networking components. The most popular is arguably the **Wall**, which is essentially a virtual bulletin board. Messages left on a member's Wall can be text, video or photos. Another popular component is the virtual **Photo Album**. Photos can be uploaded from the desktop or directly from a smartphone camera. There is no limitation on quantity, but Facebook staff will remove inappropriate or copyrighted images.

An interactive album feature allows the member's contacts (who are called generically called "friends") to comment on each other's photos and identify (tag) people in the photos. Another popular profile component is status updates, a microblogging feature that allows members to broadcast short announcements to their friends.

All interactions are published in a news feed, which is distributed in real-time to the member's friends.

Facebook offers a range of privacy options to its members. A member can make all his communications visible to everyone, he can block specific connections or he can keep all his communications private. Members can choose whether or not to be searchable, decide which parts of their profile are public, decide what not to put in their news feed and determine exactly who can see their posts. For those members who wish to use Facebook to communicate privately, there is a message& chat feature, which closely resembles email.

5.4.2.2 Twitter (also known as the SMS of the Internet)

Twitter is an online social networking service that enables users to send and read short 140-character messages called "tweets". Registered users can read and post tweets, but those who are unregistered can only read them. Users access Twitter through the website interface SMS or mobile device app. Twitter



Figure 5.23– Twitter

Inc. is based in San Francisco and has more than 25 offices around the world.

Twitter was created in March 2006 by Jack Dorsey, Evan Williams, Biz Stone, and Noah Glass and launched in July 2006.

Some key features are listed below:

- **Tweet:** A tweet is a piece of text no longer than 140 characters. Spaces and punctuation count. Think of it as a blog entry, a bitesized blog entry.
- **Timelines:** A timeline on Twitter is a collection of tweets in chronological order. The Public Timeline consists of every public tweet made. When you tweet, you create your own timeline that people will see when they visit your profile page. You can see your own timeline by clicking the Profile link in the top menu. Every user also has their own unique timeline that consists of the tweets from everyone they follow. It's like your own personal news ticker. You can follow bunches of different people and all their tweets, except messages to other people, will show up here.

- **Twitter Profile:** Click the Settings link in the top menu to edit your Twitter profile. One thing to keep in mind is everything in the Account section is publicly visible. You can put whatever you like as your name if you don't want your real name to be public. Using a head shot as your picture is the norm.
- **Following & Followers:** Following is Twitter's word for Subscribing or Friending. Whenever you visit someone's profile page you'll see a little Follow button below their picture. Click on that button and their tweets will show up on your home timeline. Following is a one-way action on Twitter. Unless someone has made their updates private, they don't have to approve your request to follow. If they haven't turned the feature off, they will get an e-mail telling them that you are now following them. They may well check out your tweets, and follow you back if it looks like you put interesting stuff out there.

➤ Conversation

- ❖ Direct Messages are private. Only the sender and recipient can see them. You can only send them to people following you. In my experience, Direct Messages are not a good way of communicating. They are often ignored and often used to spam.



Figure 5.24– Hashtag

- ❖ You can see tweets mentioning you by clicking the @YourName link on the right side of the Twitter page. To direct a tweet at someone specific begin it with @ followed by their username.
- ❖ To let your followers get the tweet in their timeline, and direct it at someone just include the @username someplace other than the beginning.

- **ReTweets (RT):** ReTweeting is when someone repeats someone else's tweet, so their own followers can see the original message.

The traditional way of ReTweeting follows a formula:

RT @OriginalAuthor Content of original tweet [ReTweeter's comment]

- **Hashtags: #hashtag:** Hashtags let you add categories or keywords to your tweet. Using hashtags allows people to aggregate all the tweets on a subject. They consist of the hash sign, #, and a keyword with no spaces. Hashtags are now automatically turned into links to Twitter searches.

You'll see hashtags being used for conferences and events a lot. You can follow live coverage of all sorts of things by searching for the associated hashtag. You can track what's going on in a city or state, or you can tune in to a topic.

5.4.2.3 LinkedIn

LinkedIn is a business-oriented social networking service. Founded in December 2002 and launched on May 5, 2003, it is mainly used for professional networking. As of 2015, most of the site's revenue comes from selling access to information about its users to recruiters and sales professionals.

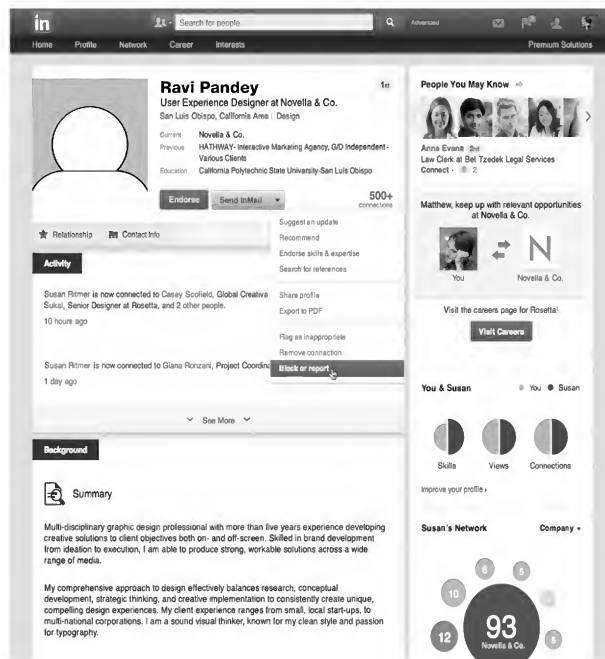


Figure 5.25– LinkedIn

LinkedIn users create professional, resume-like profiles that allow other site members to learn more about their business background, areas of expertise and groups or organizations they belong to. Once a user creates their profile, they can add other users to their network.

The profiles also include options for including status updates that let those in a user's network know what they're working on and when they might be traveling, or offer advice when needed. There is also a feature that allows those not signed in to LinkedIn to view parts of the profile the user deems allowable.

Some key features are listed below:

➤ **Keep In Touch:** With people changing jobs so often, LinkedIn gives users the opportunity to stay updated on where those in their professional network are working and how to contact them.

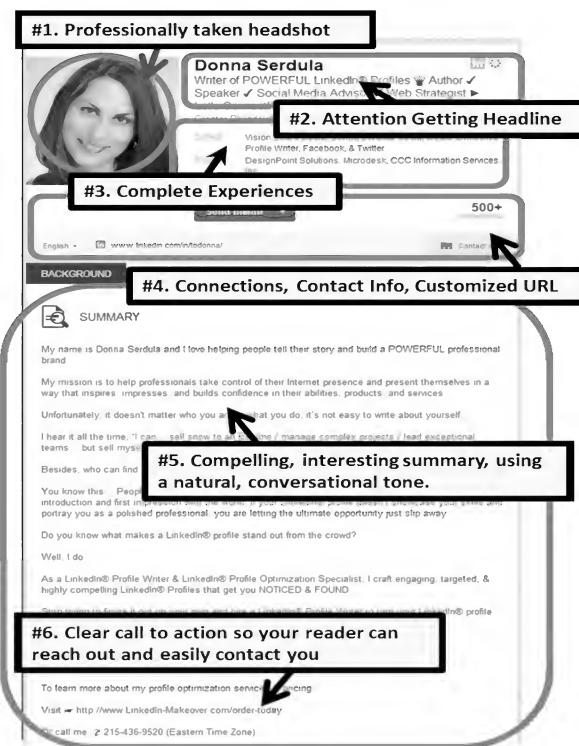


Figure 5.26– LinkedIn

➤ **Get Help:** When a user's immediate network of contacts can't help with a business problem,

Linked In's tools -- Answers and Groups -- let them connect with experts through trusted introductions.

- **Search for Jobs:** LinkedIn Jobs lets users search thousands of employment listings, with options for filling out applications directly on the site. The application and LinkedIn profile is then sent directly to the potential employer.
- **Hire New Employees:** Hiring managers can use LinkedIn to find the candidate with the specific skill set and necessary experience.

USEFUL TIP

To start using Social Networking, we suggest you try opening a free Facebook Account & connect with some of your friends to try various features.

QUICK REVIEW

- What are the types of Blogs?
- How can be LinkedIn In helpful for searching jobs?
- What are the various features of Facebook?

5.5 e-Commerce

Ecommerce (or electric commerce) refers to the buying and selling of goods and services via electronic channels, primarily the Internet. Online retail is immensely convenient due to its 24-hour availability, global reach and generally efficient customer service.

E-commerce businesses may employ some or all of the followings:

- Online shopping web sites for retail sales direct to consumers
- Providing or participating in online marketplaces, which process third-party business-to-consumer or consumer-to-consumer sales
- Business-to-business (B2B) buying and selling.
- Gathering and using demographic data through web contacts and social media
- Business-to-business electronic data interchange
- Marketing to prospective and established customers by e-mail or fax (for example, with newsletters)



Figure 5.27– e-Commerce

- Engaging in pretail for launching new products and services

The types of e-commerce setup are explained below:-

- Pure-click or pure-play companies are those that have launched a website without any previous existence as a firm.
- Bricks-and-clicks companies are those existing companies that have added an online site for e-commerce.
- Click-to-brick online retailers that later open physical locations to supplement their online efforts

There are multiple types of e-sales scenario; some of it is as follows:

- **Business-to-Consumer (B2C):** In a Business-to-Consumer E-commerce environment, companies sell their online goods to consumers who are the end users of their products or services. Usually, B2C E-commerce web shops have an open access for any visitor and user.
- **Business-to-Business (B2B):** In a Business-to-Business E-commerce environment, companies sell their online goods to other companies without being engaged in sales to consumers. In most B2B E-commerce environments entering the web shop will require a log in. B2B web shop usually contains customer-specific pricing, customer-specific assortments and customer-specific discounts.
- **Consumer-to-Business (C2B):** In a Consumer-to-Business E-commerce environment, consumers usually post their products or services online on which companies can post their bids. A consumer reviews the bids and selects the company that meets his price expectations.
- **Consumer-to-Consumer (C2C):** In a Consumer-to-Consumer E-commerce environment consumers sell their online goods to other consumers. A well-known example is eBay.
- **m-Commerce (Mobile Commerce):** M-commerce (mobile commerce) is the buying and selling of goods and services through wireless handheld devices such as cellular telephone and personal digital assistants (PDAs). Known as next-generation e-commerce, m-commerce enables users to access the Internet without needing to find a place to plug in.

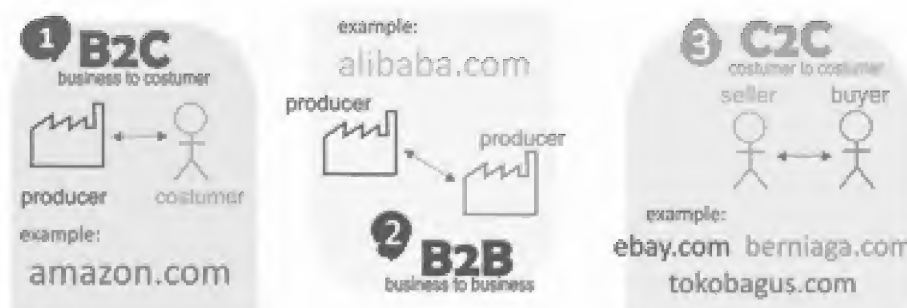


Figure 5.28– e-Commerce Types

The main advantage of e-commerce is its **ability to reach a global market**, without necessarily implying a large financial investment. The limits of this type of commerce are not defined geographically, which allows consumers to make a global choice, obtain the necessary information and compare offers from all potential suppliers, regardless of their locations.

By allowing direct interaction with the final consumer, e-commerce shortens the product distribution chain, sometimes even eliminating it completely. This way, a direct channel between the producer or service provider and the final user is created, enabling them to offer products and services that suit the individual preferences of the target market.

E-commerce allows suppliers to be **closer to their customers**, resulting in increased productivity and competitiveness for companies; as a result, the consumer is benefited with an improvement in quality service, resulting in greater proximity, as well as a more efficient pre and post-sales support. With these new forms of electronic commerce, consumers now have virtual stores that are open 24 hours a day.

Cost reduction is another very important advantage normally associated with electronic commerce.

5.5.1 e-Commerce Applications

The most common E-commerce applications are as follows:

Retail and wholesale:

E-commerce has a number of applications in retail and wholesale. E-retailing or on-line retailing is the selling of goods from Business-to-Consumer through electronic stores that are designed using the electronic catalog and shopping cart model. A Cybermall OR E-Marketplace attracts the customer and the seller into one virtual space through a Web browser.

Marketing:

Data collection about customer behavior, preferences, needs and buying patterns is possible through Web and E-commerce. This helps marketing activities such as price fixation, negotiation, product feature enhancement and relationship with the customer.

Finance:

Financial companies are using E-commerce to a large extent. Customers can check the balances of their savings and loan accounts, transfer money to their other account and pay their bill through on-line banking or E-banking. Another application of E-commerce is on-line stock trading. Many Websites provide access to news, charts, information about company profile and analyst rating on the stocks.

Manufacturing:

E-commerce is also used in the supply chain operations of a company. Some companies form an electronic exchange by providing together buy and sell goods, trade market information and run back office information such as inventory control. This speeds up the flow of raw material and finished goods among the members of the business community.

Auctions:

Customer-to-Customer (C2C) E-commerce is direct selling of goods and services among customers. It also includes electronic auctions that involve bidding. Bidding is a special type of auction that allows prospective buyers to bid for an item.

5.5.2 Online Shopping Sites

With people becoming busy with their work and commitments, they are left out with only a little spare time. In addition, with wide availability and usage of smart devices, people find internet as the easiest medium to meet their requirements. This has given immense popularity to some popular online shopping websites in India, & these websites are flaunting best deals to lure buyers.



Figure 5.29– Online Shopping

Online shopping offers fast, easy, money saving and interesting shopping experience, it has many advantages like 24 hours shopping, shopping with coupon to get discount, shopping from Home, rich product availability and specifications etc.

Top online shopping websites in India are given below:

- **Flipkart.com** (now also own Myntra): Founded in 2004 with only Rs. 400000 now in 2014 tuned over 60,000 Crore company. You can not only buy books online through Flipkart, but



Figure 5.30– Online Shopping

also mobile phones & mobile accessories, laptops, computer accessories, cameras, movies, music, televisions, refrigerators, air-conditioners, washing-machines, Clothings, Footwears, Accessories, MP3 players and products from a host of other categories. Flipkart is largest player of e-commerce of India.

- **Amazon.in:** World leader in e-commerce market recently started operation in India, Now we can buy Books, CDS and Electronic at cheaper price from Amazon.in.
- **Snapdeal.com:** Snapdeal offers everything from local daily deals on restaurants, spas, travel to online products deals. They offer you best price with free shipping.
- **Paytm.com:** Started with Mobile Recharge and Bill Payment website based on mobile e-wallet concept now Paytm is selling everything from Home Decor, Clothing, Laptop to Mobile at killer price. In very short time period Paytm has grown very fast and able to come under Top 10 Indian Online Shopping website list.
- **Jabong.com:** Jabong Fashion & Lifestyle Store offers you great discount on all listed product. They offer wide range of products from Apparel to Home needs.

USEFUL TIP

Paytm platform has revolutionized e-wallet concept where you need not share your bank details directly for online transaction; it is a kind of virtual wallet which helps in instant and no hassle payments with added advantage of cashback schemes.

QUICK REVIEW

- Which is India's largest e-commerce website?
- What are the various types of e-commerce?
- Which are the major Online Shopping websites in India?

5.6 Cloud Storage

Cloud storage is a service model in which data is maintained, managed and backed up remotely and made available to users over a network (typically the Internet).

Cloud storage is a model of data storage in which the digital data is stored in logical pools, the physical storage spans multiple servers (and often locations), and the physical environment is typically owned and managed by a hosting company. These cloud storage providers are responsible for keeping the data available and accessible, and the physical environment protected and running. People and organizations buy or lease storage capacity from the providers to store user, organization, or application data.



Figure 5.31– Cloud Storage

Cloud storage services may be accessed through a co-located cloud computer service, a web

service application programming interface (API) or by applications that utilize the API, such as cloud desktop storage, a cloud storage gateway or Web-based content management systems.

Major online cloud storage services are enlisted below:-

- **Google Drive:** Google combines a complete set of office tools with cloud storage in Drive. You get a little bit of everything with this service, including a word processor, spreadsheet application, and presentation builder, plus 15GB of free storage space. If you already have a Google account, you can already access Google Drive. You just have to head to drive.google.com and enable the service. You get 15GB of storage for anything you upload to Drive, including photos, videos, documents, Photoshop files and more.
- **Microsoft One Drive:** OneDrive is Microsoft's storage solution. Those who use Windows 8 and 10 have OneDrive built into their operating system, where it shows up in the file explorer next to all of the files on your computer's hard drive. However, anyone can use it on the Web, by downloading a desktop app for latest Windows, or the OneDrive Android, iOS, Windows Phone and Xbox apps.
- **Drop Box:** Dropbox is a favorite in the cloud storage world because it's reliable, easy to use, and a breeze to set up. Your files live in the cloud and you can get to them at any time from Dropbox's website, desktop applications for Mac, Windows and Linux or the iOS & Android.
- **Box:** Anyone can sign up for a free individual account on Box , but the service's endless list of sharing and privacy features were built specifically for business and IT users. Beyond the basic cloud storage setup, where you can store just about any kind of file, Box lets you share files with colleagues, assign tasks, leave comments on someone's work, and get notifications when a file changes.

USEFUL TIP

Cloud Storage gives us the best flexibility for syncing our files/works across various devices. You can even create draft/edit/publish work files on the go irrespective of MS office suite availability as all the major Cloud storage platforms support inbuilt proprietary office application tools.

QUICK REVIEW

- What is Cloud Storage?
- Which are the major Cloud Storage Platforms?

5.7 Growth in Internet Usage

The number of Internet users in India is expected to reach 402 million by December 2015, a 49% jump over the last year, making India home to the largest online user base after China, according to a report released by the Internet and Mobile Association of India (IAMAI) and market research firm IMRB International.

India, which has the third largest Internet user base in the world after China and the US, had about **350 million Internet users in October**. By December 2015, this number is expected to overtake US to 375 million users, the report said. China currently leads with more than 600 million Internet users.

Active Internet users in rural India are expected to reach 117 million by December 2015 and 147 million by June 2016 on the back of growing penetration of mobile phones in the country.

The contribution of mobile phones as the main Internet access point in rural India has grown to 60% in 2015 from 38% in 2014. The usage of common service centers to access Internet has reduced to 6% from 26% a year ago.

IAMAI-KPMG estimates that there will be a total of 500 million Internet users (out of a total population of 1.25 billion) in India by 2017, up from a current number of about 375 million. According to the report, the number of mobile based Internet users in two years will be 314 million.

Category	Website Example	Site Address
Listening to Music	Gaana	www.gaana.com
Download YouTube Video	YouTube	www.youtube.com
Send SMS	Way2SMS	www.way2sms.com/
Online Banking	Online SBI	https://www.onlinesbi.com/
Book Movie Ticket	Bookmyshow	www.bookmyshow.com
Book Train Ticket	IRCTC	https://www.irctc.co.in/
TV Online	Hotstar	http://www.hotstar.com/
Recharge or Pay Bill	PayTM	https://paytm.com/
Online Education	Khan Academy	https://www.khanacademy.org/
Online Jobs	Monster India	www.monsterindia.com
E-shopping	Flipkart	www.flipkart.com
Online Property	Magic Bricks	www.magicbricks.com/

Table 5.1 Popular Internet Sites

USEFUL TIP

While doing Online Banking transaction, do take care of your Banking Id & Password as they are prone to cyber theft by hackers. You should always use an updated licensed Antivirus on your PC and ideally not make your contact details public on web.

QUICK REVIEW

- What are various uses of Internet?
- Which website will you use for Rail Ticket booking?
- How can you send SMS using Internet?

Multiple Choice Questions

1. Websites used for building network with friends and relatives is called as _____.
 - a. Net Banking
 - b. Blogging
 - c. Social Networking
 - d. Commerce
2. Websites used to sell and buy something are categorized under _____.
 - a. Entertainment Sites
 - b. Social Networking Sites
 - c. Search Engines
 - d. E-Commerce Website
3. Google is an example of _____.
 - a. Search Engine
 - b. Social Network
 - c. Entertainment
 - d. None of these
4. Which of the following is an example of micro blogging?
 - a. Twitter
 - b. Google +
 - c. Gmail d
 - d. Instagram
5. Online shopping is an example of which kind of transaction?
 - a. B2B
 - b. B2C
 - c. C2C
 - d. None of the above
6. Which of the following search engine is developed by Microsoft?
 - a. Bing
 - b. Yahoo
 - c. Google
 - d. Alta Vista
7. Amazon is an example of _____ site.
 - a. E-Commerce
 - b. Social Networking
 - c. Entertainment
 - d. Blogging
8. Which is an example of Network Connection Device?
 - a. Hub
 - b. Switch
 - c. Processor
 - d. Both A & B
9. What is the full form of B2B commerce - ?
 - a. Business to Business
 - b. Blog to Blog
 - c. Bank to Bank
 - d. Bank to Business
10. What is the example of a Cloud Storage Platform?
 - a. Google Drive
 - b. Microsoft One Drive
 - c. Drop Box
 - d. All of them